

128901-6
SHAUGHNESSY NO.

REVIEW

EEB REVIEW

DATE: IN 2-5-85 OUT 2-12-85

FILE OR REG. NO. 352-UGA

PETITION OR EXP. PERMIT NO. _____

DATE OF SUBMISSION 11-20-84

DATE RECEIVED BY HED 1-29-85

RD REQUESTED COMPLETION DATE 5-20-85

EEB ESTIMATED COMPLETION DATE 5-13-85

RD ACTION CODE/TYPE OF REVIEW 110/New Chemical

TYPE PRODUCT(S): I, D, H, F, N, R, S Herbicide

DATA ACCESSION NO(S). _____

PRODUCT MANAGER NO. R. Taylor (25)

PRODUCT NAME(S) Du Pont Classic Herbicide (DPX-F6025)

COMPANY NAME E. I. du Pont de Nemours & Company

SUBMISSION PURPOSE Proposed full registration of soybeans
use (for new chemical)

SHAUGHNESSY NO.	CHEMICAL, & FORMULATION	% A.I.
<u>128901</u>	<u>2-((((4-chloro-6-methoxypyrimidine-2-yl)</u>	<u>25</u>
<u></u>	<u>amino carbonyl)) aminosulfonyl))-benzoic</u>	<u></u>
<u></u>	<u>acid, ethyl ester</u>	<u></u>

EEB REVIEW

100 Submission Purpose and Label

100.1 Submission Purpose and Pesticide Use

The registrant (E.I. du Pont de Nemours and Company) has applied for a permit to use DPX-F6025, a herbicide, on soybeans to control weed growth.

100.2 Formulation Information

DPX-F6025 25%
Inerts 75%

100.3 Application Methods, Directions, Rates

(The following information is cited directly from the label).

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

SPRAY TANK PREPARATION

"Classic" Herbicide should be thoroughly mixed with water in the spray tank before adding any other material (e.g., surfactant). Agitation is required for uniform mixing and application. Apply "Classic" spray preparation within 24 hours of product mixing or product degradation may occur. Thoroughly reagitate before using.

APPLICATION RECOMMENDATION

For postemergence applications made by ground equipment use a minimum of 10 gallons of water per acre to insure adequate coverage. For aerial applications, use a minimum of 5 gallons of water per acre. Postemergence applications of "Classic" should include a surfactant of at least 0.20% (v/v). Use a quality surfactant of at least 80% active ingredient to improve wetting and/or contact activity of "Classic". Do not use a crop oil, crop oil concentrate, or vegetable oil with "Classic" as severe crop injury may result.

POSTEMERGENCE.

"Classic" Herbicide can be applied from crop emergence through the 5th trifoliolate leaf stage of soybeans.

<u>RATES</u>
<u>(oz/Acre)</u>
<u>(1/2) - (1)</u>

Temporary chlorosis and/or retardation of soybean growth may occur following "Classic" application. These effects will generally be most evident 5-7 days after application.

TANK MIX RECOMMENDATIONS

"Classic" Herbicide may be tank mixed with "Blazer"¹ or "Basagran"².

The addition of "Basagran" to the tank mix will aid in the control of prickly sida and velvetleaf in addition to the above weeds.

The addition of "Blazer" to the tank mix will aid in the control of hemp sesbania and morningglory.

Refer to complete labeling of "Basagran" and "Blazer" for use instructions.

A second application of "Classic" at 1/2 oz per acre may be made two to three weeks after the initial application if conditions warrant. Do not exceed 1 oz total "Classic" per season.

MINIMUM RECROPPING INTERVAL AND ROTATIONAL GUIDELINES

Crops that can be planted after using "Classic" Herbicide are listed below. Choice of rotational crop is determined by total time interval elapsed since last application. Do not plant any crop other than those listed during each time interval as crop injury may result.

¹trademark of Rohm & Haas Co., Philadelphia, PA.

²trademark of BASF Wyandotte Corp., Parsippany, NJ.

Total amount of "Classic" Herbicide applied per year	Time Interval Before Replanting			
	Less than 3 months	After 3 months	After 9 months	After 18 months
1/2 - 1 oz/acre	soybeans	soybeans wheat cotton peanuts	soybeans wheat corn cotton peanuts rice sorghum	Field bioassay** for all other crops

*Bioassay - The season before planting any crop not listed above, a successful field bioassay must be completed. The field bioassay will detect small quantities of "Classic" which can remain in the soil and injure rotational crops. A successful field bioassay means growing to maturity a test strip of the crop(s) intended for production the following year.

SPRAYER CLEANUP

IMPORTANT - To avoid subsequent injury to crops other than soybeans, immediately after spraying and prior to spraying other crops, thoroughly remove all traces of "Classic" Herbicide from mixing and spray equipment as follows:

- 1) Drain tank; then flush tank, boom, and hoses with clean water for a minimum of 10 minutes.
- 2) Fill the tank with clean water then add 1/2 gallon chlorine bleach (containing 5 1/4% sodium hypochlorite) per 100 gallons of water. Flush through boom and hoses, then allow to sit for 15 minutes with agitation; then drain.
- 3) Repeat Step 2.
- 4) Nozzles and screens should be removed and cleaned separately. To remove traces of chlorine bleach, rinse the tank thoroughly with clean water and flush through hoses and boom.

PRECAUTIONS

Do not apply "Classic" Herbicide later than the 5th trifoliolate leaf stage of the soybeans.

Do not apply "Classic" Herbicide on soil with a pH greater than 7.0.

Do not graze treated fields or harvest for forage or hay.

Do not apply "Classic" Herbicide to plants under stress from abnormal weather or growing conditions, drought, water saturated soil, disease, insect or prior herbicide injury, as crop injury may result. Severe stress, drought, disease, or insect damage following applications may also result in crop injury.

Do not apply "Classic" Herbicide postemergence if rain is expected within 4 hours of application as control may be unsatisfactory.

Do not mix "Classic" Herbicide with any other crop protection chemical, fertilizer, or additive except as directed by this label.

IMPORTANT

Injury to or loss of desirable trees or vegetation may result from failure to observe the following: Do not apply or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. Do not use on lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of spray to desirable plants. Do not contaminate any body of water. Keep from contact with fertilizers, insecticides, fungicides, and seeds during storage.

Thoroughly clean all traces of "Classic" Herbicide from application equipment immediately after use and prior to spraying crops other than soybeans. Clean-up procedures are described in the "SPRAYER CLEANUP" section of this label. Failure to follow these procedures may result in injury to subsequently sprayed crops.

GENERAL INFORMATION

Du Pont "Classic" Herbicide is a dispersible granule formulation to be mixed with water and sprayed for selective postemergence weed control in soybeans. When applied according to the instructions on this label, it will control many broadleaf weeds and yellow nutsedge.

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IMPORTANT: Prior to using "Classic", consideration should be given to crop rotation plans. Crops other than soybeans can be extremely sensitive to low concentrations of "Classic" remaining in the soil the next planting season. Choice of rotation crop is restricted following application of "Classic". (See "MINIMUM RECROPPING INTERVAL AND ROTATION GUIDELINES".) Do not apply to soil with a pH greater than 7.0 as extended soil residual activity could adversely affect crop rotation options beyond indicated intervals.

"Classic" will provide best postemergence results when applied to young, actively growing weeds. Degree of control, and duration of effect depend on: rate used; weed spectrum; weed size; growing conditions at and following time of treatment; soil pH, texture, organic matter, moisture; precipitation; and spray adjuvants.

Because most crops, other than soybeans, are highly sensitive to "Classic" Herbicide, all direct or indirect contact (such as spray drift) to crops or land scheduled to be planted to crops other than soybeans should be avoided.

BIOLOGICAL ACTIVITY

"Classic" rapidly inhibits the growth of susceptible weeds. Following postemergence application, leaves of susceptible plants appear chlorotic in 3-5 days followed by necrosis of the growing point. Susceptible plants are controlled in 7-21 days. Necrosis of leaf tissue and growing point will follow in some species while others will remain green but stunted and noncompetitive.

100.4 Target Organisms

The following weeds will be controlled or suppressed

cocklebur	sunflower
jimsonweed	yellow nutsedge
pigweed	*hemp sesbania
ragweed, common	*morningglory
ragweed, giant	*sicklepod
smartweed	*velvetleaf

* Weeds marked with an asterisk may be killed or suppressed. Weed suppression is a visual reduction in weed competition (reduced population, size, and/or vigor) as compared to an untreated area. Degree of control can be increased by treating when weeds are small and by using the higher end of the use rate range. A timely cultivation 1-2 weeks after treatment will improve control of suppressed weeds.

100.5 Precautionary Labeling

ENVIRONMENTAL HAZARDS

Do not apply directly to water or wetlands. Do not contaminate water by cleaning of equipment or disposal of wastes.

101 Hazard Assessment

101.1 Discussion

DPX-F6025 will be marketed for weed control in soybeans. The maximum application rate of formulated product will be 1 oz per acre or .0625 lb/acre. The formulated product contains only 25% active ingredient. Therefore, the maximum application rate of active ingredient will be quite low (.0156 lbs/acre). It is expected that this product would be used in all of the principal soybean growing areas in the United States.

101.2 Likelihood of Adverse Effects to Non-Target Organisms

The following maximum estimated environmental concentrations of DPX-F6025 in water and soil were derived using the methods of Hoerger and Kanaga (1972) and Kanaga (1973). These estimates assume the use of the maximum application rate of .0156 lbs/acre a.i. Estimates of residues in water assume the direct application of product to a 6-inch acre-layer pond.

<u>Environment</u>	<u>Maximum Expected Residues</u>
Soil (.1 in)	.44 ppm
Water* (.5 ft acre-layer)	7.35 ppb

Based upon the data submitted with this request, and the data reviewed in support of an earlier Experimental Use Permit (Daniel Reider 12-2-83) for this product, DPX-F6025 can be considered practically non-toxic to birds on both an acute oral basis (mallard duck LD₅₀ > 2,510 mg/kg) and also on a dietary basis (bobwhite quail 8-day dietary LC₅₀ > 5,620 ppm and mallard duck dietary LC₅₀ > 5,620 ppm). DPX-F6025 is slightly toxic to bluegill sunfish (LC₅₀ > 10 ppm), rainbow trout (LC₅₀ > 12.0 ppm) and Daphnia magna (LC₅₀ > 10 ppm). DPX-F6025 is practically nontoxic to species of mammals tested (Rat LD₅₀ > 2,000 ppm).

The maximum expected residues on soil and water do not approach the LC₅₀ values of the organisms tested. Thus, if the product is used at the maximum application rate on soybeans, it is not expected that exposed populations of fish

and wildlife would be significantly affected. The mode of action of this herbicide, competitive inhibition of the enzyme acetolactate synthase, would indicate that some species of nontarget plants exposed to the herbicide could be affected. Nontarget plants most likely to receive exposure would be those terrestrial and aquatic species receiving exposure through runoff. There are, however, inadequate data available to quantify the phytotoxic effect of this herbicide at the maximum estimated environmental concentration in water.

101.3 Endangered Species

It is not expected that the use of DPX-F6025 at the maximum proposed application rate will adversely affect Endangered/Threatened species. Triggers are not exceeded for endangered species of fish and wildlife. This is mainly because of the product's low toxicity and application rate.

101.4 Adequacy of Toxicity Data

The following studies were submitted in support of a prior application for an Experimental Use Permit. They were found to be scientifically sound, and may be used to fulfill the guidelines requirements.

<u>Species</u>	<u>Test</u>	<u>Results</u>
mallard duck	avian acute	LD ₅₀ > 2,510 mg/kg
bobwhite quail	avian dietary	LC ₅₀ > 5,620 ppm
mallard duck	avian dietary	LC ₅₀ > 5,620 ppm

The following studies were submitted in support of a prior application for an Experimental Use Permit. They were judged to be unacceptable to support of registration because the test material precipitated out of solution at concentrations substantially below the documented product solubility. The EEB reviewer (Daniel Reider, 1983) indicated that, "prior to registration these studies should either be reconducted using an appropriate solvent, or new data should be provided showing what measures were taken to get DPX-F6025 into solution and why it did not dissolve."

<u>Species</u>	<u>Test</u>	<u>Results</u>
rainbow trout	96-hour LC ₅₀	LC ₅₀ > 12.0 mg/L
bluegill sunfish	96-hour LC ₅₀	LC ₅₀ > 10.0 mg/L
<u>Daphnia magna</u>	48-hour EC ₅₀	EC ₅₀ > 10.0 mg/L

The registrant has indicated that solubility problems were caused by test water ionic strength, pH, and temperatures (the solubility of DPX-F6025 varies from 1,200 mg/L at pH=7 to 9 mg/L at pH=5). The registrant has further indicated that test material precipitation occurred only in the area of the pipette stream, where localized concentrations exceeded the solubility of the test well water. Mixing permitted dissolution of the test material. LC₅₀ tests on bluegill sunfish and Daphnia magna were repeated after raising the pH of the test water to 9.0 with NaOH. Increased pH permitted the introduction of dissolved test material at concentrations of 100 mg/L. The rainbow trout study was not repeated.

In consultation with EEB reviewer, Daniel Reider, it has been determined that the registrant has adequately demonstrated why the test material precipitate formed during the initial test, and that appropriate measures have been taken to get the test material into solution. Consequently the original tests performed on rainbow trout, bluegill sunfish, and Daphnia magna may be used to fulfill the guidelines requirements.

Data submitted with the new tests performed at pH=9, and under conditions of higher test material concentration, were inadequate to evaluate the experimental results of these studies. Pages of the studies were missing. If the registrant wishes to document higher LC₅₀ values, these studies should be resubmitted with a complete data and information package.

The honeybee acute toxicity study submitted in support of an Experimental Use Permit for DPX-F6025 was initially determined to be invalid because it did not contain a sufficient description of protocol (Daniel Reider, 1983). The registrant has revised this report to include the missing information, and it has been judged acceptable to fulfill the guidelines requirements.

101.5 Adequacy of Labeling

The proposed label is acceptable.

102 Classification

The maximum proposed dosage of .0156 lb/acre of DPX-F6025 makes it unlikely that the use of this product will provide hazards to nontarget fish and wildlife. Triggers are not exceeded for restricted use for avian and aquatic organisms or mammals tested.

EEB has completed a full risk assessment (3(c)(5) finding) of the proposed registration of DPX-F6025 for use on soybeans. Based upon the available data and use information, EEB concludes that the proposed use provides for minimal hazards to nontarget organisms. This evaluation is based upon new information submitted to clarify prior studies. New studies submitted with this application were not evaluated because adequate data were not included. If the registrant wishes to document the higher LC₅₀ values supported by the new studies, the missing data must be submitted.

Thomas M. Armitage 3-13-85

Thomas M. Armitage
Fishery Biologist
Ecological Effects Branch (EEB)
Hazard Evaluation Division (HED)

Raymond A. Matheny 3-13-85
Raymond Matheny
Head, Section 1
EEB/HED

Michael W. Slimak 3/15/85
Michael Slimak
Chief
EEB/HED